S o u t h o l d 2 0 2 0

The New Comprehensive Plan for the Town of Southold

Natural Hazards

Draft (9/16/13)

Introduction

Natural hazards are natural events that threaten lives and property, and tend to occur repeatedly in the same geographical locations. They can often be predicted because they are related to weather patterns and/or physical characteristics of an area. The Town of Southold is subject to natural hazards that can imperil human lives, property and the environment. Within the last century the Town has witnessed significant weather-related occurrences including numerous hurricanes, tropical storms, severe thunderstorms and nor'easters. The hazards from these storms include flooding, wind damage, shoreline erosion and tornados. Other natural hazards that occur, and are predicted to re-occur, are drought and extreme temperatures (see Table 1. for a list of natural hazards for Southold Town). Planning and preparing for natural hazards can and will help save lives and property.

Table 1. List of Natural Hazards for Southold Town

Natural Hazard
Flooding (coastal, riverine, flash & urban flooding)
Nor'easters (extra tropical cyclones, including severe winter low-pressure systems)
Severe Winter Storm (heavy snow, blizzards, ice storms)
Coastal Erosion
Severe Storm (windstorms, thunderstorms, hail, tornados)
Hurricane (tropical cyclones, tropical storms, tropical depressions)
Sea Level Rise
Drought
Extreme Temperature (heat wave or cold temperatures)
Wildfire

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Severe storms, severe winter storms and nor'easters are noted as high risks for Suffolk County, and are predicted to occur frequently in Southold Town, according to the County's hazard mitigation plan.[1] The National Flood Insurance Program is predicting an increase in flooding frequency with more frequent coastal inundation as strong storms occur more often, and sea levels continue to rise. With 220 miles of shoreline, and over 1100 homes and many businesses located in the flood zone, the Town of Southold is vulnerable to coastal flooding.

Sea level rise will contribute to worsening coastal flooding over time, as well as related hazards such as salt-water intrusion into groundwater areas currently used for drinking water. According to measurement data from the National Oceanic and Atmospheric Administration (NOAA), sea level has risen about two inches in the Long Island area over the past twenty years (1993 – 2013). In the next twenty years, the rate of sea level rise is predicted to increase due to the warming of the oceans (water expands as it warms) and also due to ice melt from the polar regions. Studies project that Long Island will experience a two to five inch additional rise in sea level in the 2020's. If the rate continues to increase, however, the actual sea level rise in the 2020's could reach as high as ten inches.[2] This will result in more homes and infrastructure being vulnerable to the effects of future storms. To view the potential effects of sea level rise for Southold, click on the following link ((*this link to be added when the sea level rise illustration application is ready – by October, 2013*)).

To help minimize potential damage to structures in vulnerable areas, the National Flood Insurance Program identified those areas most vulnerable to flooding. These areas are known as the Special Flood Hazard Area (see Figure 1.) and are predicted to have a one percent likelihood of flooding in any given year. The Special Flood Hazard Area is also the area likely to flood during a 6–8' storm surge (as was experienced in Southold during storm Sandy in 2012). Flooding can also occur beyond the Flood Hazard Area during more powerful storms. Suffolk County maintains a storm surge model online that residents can use to see their potential vulnerability to flooding from different size storm surges. This model is available on the internet for public use, and is located at the following web address: http://gis2.suffolkcountyny.gov/gisviewer/.

Coastal flooding causes erosion, another significant natural hazard for Southold. Erosion of the shoreline can also be caused by the normal processes of wind, currents and wave action. Coastal erosion leads to loss of property and structures, and potentially hazardous conditions for waterfront landowners. There are areas in Southold Town that experience significant erosion problems, and steps need to be taken to deal with this issue.

In addition to increasing frequency of severe storms and related flooding, the 2011 ClimAid report from the New York State Energy Research and Development Authority (NYSERDA) also predicts increases in extreme heat events (heat waves) and droughts for Long Island. Extreme heat and drought can cause loss of human life, damage and loss of agricultural crops and

[1] Suffolk County Multi-Jurisdictional Multi-Hazard Mitigation Plan, 2007

[2] Climate Adaptation Guidebook for New York State, 2011

landscaping, and reduction in the quantity and quality of drinking water. Hot dry weather can also lead to wildfire, another potential natural hazard.

Local government is charged with responding immediately before and after natural disasters to protect its citizens. Government has a **shared** responsibility with its constituents to plan and manage emergency resources. All Southold residents and visitors are encouraged to take personal responsibility for their own preparedness before an emergency is imminent. To fulfill its share of the responsibility for emergency planning, the Town produced a plan for responding to coastal storms.

In 1995, the Southold Town Board adopted the "Town of Southold Hurricane/Coastal Storm Emergency Response Plan" (herein noted as Emergency Response Plan) that serves as a template to guide the Town's efforts to prepare and respond to weather-related emergencies. This plan was prepared with the assistance of the Suffolk County Department of Fire, Rescue and Emergency Services and the New York State Emergency Management Office. The plan defines the roles and responsibilities of Southold Town for responding to hurricanes and other coastal storms to save lives and reduce injuries. The Emergency Response Plan includes information about the location of emergency shelters, evacuation procedures, and other protective measures. It also establishes protocols enabling the Supervisor to declare a "State of Emergency."

To implement the Emergency Response Plan, the Town has designated an "Emergency Preparedness Team" serving as the "Southold Town Office of Emergency Management." This team consists of a diverse membership of employees from the Town, Fire Departments, Greenport Village and Fishers Island. They are responsible for preparing for, responding to, and managing the immediate impacts from natural hazards, and have successfully done so since their inception.

Emergency response is only one part of planning for natural hazards. Hazard mitigation, and post disaster recovery and reconstruction are the other main areas of natural hazard planning. Hazard mitigation planning was completed for Southold in 2009 when FEMA accepted the Suffolk County Multi-Jurisdictional Multi-Hazard Mitigation Plan. Southold participated in this plan along with most of the towns and villages in Suffolk County. The plan identifies hazards, assesses the risk from those hazards, and lists mitigation efforts for the County and each town. This mitigation plan must be updated every five years.

Post-disaster issues, at least short term, are discussed in the Town's Emergency Response Plan; however, the Town needs to take a more comprehensive and long-term approach to post-disaster recovery planning. Preparing for a potentially devastating storm is prudent, and one of the objectives in this chapter includes a recommendation for creating such a plan.

Planning for natural hazards relates to several of the other chapters in this comprehensive plan. Building coastal resiliency into the Town's plan will help the economy, make housing safer, and protect future investments in property, both private and public. For these reasons, the Natural Resources Chapter and the Land Use Chapter both contain significant references to planning for natural hazards and contain similar and additional goals to those put forth in this chapter.

Goals

1. Mitigate the effects of natural hazards to achieve coastal resiliency, protect public safety and reduce economic loss.

The Town faces numerous hazards that are likely to occur, including severe storms, nor'easters, and hurricanes. Mitigation involves taking steps to ensure those hazards will not cause injury or death to people, and to reduce economic loss to structures and other property. As mentioned above, the Town has a hazard mitigation plan that can be found within the County's Multi-Jurisdictional Multi-Hazard Mitigation Plan (Hazard Mitigation Plan).

The Hazard Mitigation Plan contains a profile of the County and Southold Town, identifies the potential hazards, assesses the risk of the hazards and proposes ways to reduce the impacts from the hazards (mitigation). This plan can be found online at the following web address: http://apps.suffolkcountyny.gov/respond/ (click on "FEMA Approved Plan").

Coastal resilience is a term used to describe a place's ability to withstand coastal hazards such as sea level rise and flooding while minimizing threats to human life and property. The Hazard Mitigation Plan can be considered part of the Town's coastal resilience plan, especially if sea level rise is added to the list of hazards that must be mitigated.

Objectives

1.1. Prepare a coastal resilience plan for Southold Town.

Working towards a town that is more resilient to coastal hazards will require a multi-step approach that results in changes to policies and regulations. Southold Town has already taken steps to become more resilient to coastal natural hazards such as flooding and erosion from storms and sea level rise through existing regulations relating to flood zones, wetlands and building codes. These and additional regulations from other levels of government need to be assessed for their effectiveness in mitigating the effects of coastal hazards.

In addition to this chapter, this plan contains goals and objectives in other chapters that will lead towards coastal resilience, including the Natural Resources and Environmental Protection chapter and the Land Use chapter. Existing plans such as the County's Hazard Mitigation Plan also have a role to play in our coastal resilience plan.

After assessing existing tools and plans, data and models from the most reliable sources will be used to formulate a rational plan for improving our coastal resiliency wherever feasible. Sources for data and models related to sea level rise and flooding include NOAA, FEMA, and New York State, as well as academic institutions. Models such as interactive maps showing the land that sea level rise is predicted to affect are available

from several sources right now, and will become more accurate over time. Examples of sea level rise models can be viewed at the following websites:

- NOAA's Sea Level Rise and Coastal Flooding Impacts interactive map http://www.csc.noaa.gov/slr/viewer/#

- Coastal Resilience.org website's Future Scenarios Map http://coastalresilience.org/geographies/new-york-and-connecticut/future-scenarios-map

1.1.1. Audit Southold's existing regulations related to coastal resilience.

1.1.2. Identify the best models for sea level rise.

Responsible Parties: Planning Board
Possible Partnerships: Emergency Preparedness Team, Office of the Town Engineer, Suffolk County, New York State
Possible Funding Sources: New York State Hazard Mitigation Grant, New York State DOS EPF Grant
Timeline: 2014

1.2. Participate in the update to Southold's hazard mitigation plan, in cooperation with Suffolk County and the Suffolk County Multi-Jurisdictional Multi-Hazard Mitigation Plan.

This plan was drafted in 2007 and approved by FEMA in 2009. FEMA requires this plan be updated every five years. A current mitigation plan is important for a community to remain eligible for hazard mitigation grant funds that can help implement the mitigation measures.

1.1.1 Add 'extreme temperatures' as a significant hazard.

Extreme temperatures are identified as a hazard for Suffolk County, but the risk of extreme temperatures causing widespread problems was not considered significant in the Multi-Hazard Plan. Recent studies are predicting an increase in the occurrence of extreme temperatures in the future and making the case for considering what we might do to mitigate the effects of this hazard.

1.1.2 Add 'sea level rise' to the list of hazards.

As cited above, reports predict sea level to rise at an increasing rate in the near future. This will increase the Special Flood Hazard Area and eventually permanently flood the lowest-lying areas in Southold, making this a necessary

hazard for which to plan and mitigate. Adding sea level rise as a hazard to be mitigated will help the Town take steps towards coastal resiliency.

1.1.3 Identify mitigation measures that have already been accomplished and remove them from the plan.

1.1.4 Identify new mitigation measures and add them to the plan, including the following:

1.1.4.1 Measures that address agricultural land/crops at risk from flooding, drought, storms.

1.1.4.2 Measures that address the increased pollution and health hazards from flooding due to storms, as well as water inundation due to sea level rise. These measures include flooded sewer and septic systems, oil tanks, and drinking water wells.

Responsible Parties: Emergency Preparedness Team
Possible Partnerships: Southold Planning Board and Planning Department, Southold Town Trustees, Village of Greenport, Natural Resources Conservation Service
Timeline: 2014

1.3. Implement the recommendations for hazard mitigation for Southold in the Suffolk County Multi-Jurisdictional Multi-Hazard Mitigation Plan after it has been updated.

The current mitigation plan includes data and analyses for individual towns. Southold's portion of the plan includes a history of the occurrence of natural hazards, an analysis of its future vulnerability to those hazards, and a list of hazard mitigation measures.

Southold has a list of 17 mitigation measures in the current plan, some of which have been completed, and some of which are outdated or inconsistent with the Town's current goals. The current plan can be found online at http://apps.suffolkcountyny.gov/respond/ (click on "FEMA Approved Plan").

Those measures include retrofitting evacuation routes from flood hazard areas, considering the relocation or elevation of structures in the floodplain, and stabilizing vulnerable bluffs. This plan is scheduled to be updated regularly and the current mitigation measures must be revised to be consistent with the Town's Comprehensive Plan prior to implementation.

1.3.1. Prioritize the mitigation measures.

1.3.2. Identify funding sources to implement mitigation measures.

1.3.3. Identify partnerships and areas of cooperation with adjacent municipalities including Greenport Village, Riverhead and Shelter Island.

Responsible Parties: Planning Board and Planning Department
Possible Partnerships: Emergency Preparedness Team, Office of the Town Engineer, Suffolk County, New York State, Village of Greenport, Southold Town Trustees, Town of Riverhead, Town of Shelter Island
Timeline: 2014

1.4. Re-examine the location of the Coastal Erosion Hazard Area line.

In 1991 the Town of Southold enacted the "Town of Southold Coastal Erosion Hazard Area Law" to allow the Town to assume the responsibility, authority and administration of the Coastal Erosion Management Program established pursuant to Article 34 of the Environmental Conservation Law. The law regulates activities in an area called the Coastal Erosion Hazard Area (CEHA). This area is located along the shoreline where coastal erosion is most likely to occur. Development within the CEHA is generally prohibited due to the risk of erosion.

The line identifying the location of the CEHA (known as the "CEHA line") was mapped by the New York State Department of Environmental Conservation in the late 1980's. Since enactment of the law, shorelines have changed due to erosion caused by wave velocity and adverse weather conditions caused by storm events. Correspondingly, severe erosion and structural loss has been documented along the Peconic Bays, on Fishers Island and other shorelines in areas not included in the mapped Coastal Erosion Hazard Areas.

It is recommended that the Town work with the New York State Department of Environmental Conservation to re-assess the accuracy of the Coastal Erosion Hazard Areas and its applicability to unmapped areas along the Great Peconic Bay and Little Peconic Bay shorelines as a result of rate of erosion and frequent structural loss.

Responsible Parties: Planning Board
Possible Partnerships: New York State DEC
Timeline: 2014

1.5. Update the Town of Southold Hurricane/Coastal Storm Emergency Response Plan.

The Town's Emergency Response Plan reflects the Town's efforts to expediently and effectively respond to natural hazard emergencies. This document serves as a valuable resource in assisting personnel responsible for preparing and responding to the damages of natural hazards. The existing plan is almost twenty years old and requires periodic updating to reflect changes in personnel, technology, and resources.

1.5.1. Update the plan to include the latest shelter locations and resources provided at those shelters.
1.5.2. Consider how best to inform residents ahead of time that their house is in a flood zone, and that they may be subject to future evacuations, or their location is at risk of being isolated during a flooding event (example: Orient Causeway flooding).
1.5.3. Provide Spanish-speaking volunteers at shelters.

Responsible Parties: Emergency Preparedness Team
Possible Partnerships: Suffolk County Department of Fire, Rescue and Emergency Services, New York State Emergency Management Office
Timeline: 2014

2. Complete a Post Disaster Recovery & Reconstruction Plan

In the event a natural disaster occurs in Southold, the Town needs to plan for long-term recovery and reconstruction. Depending on the extent of the disaster, this phase can go far beyond the time-frame and activities covered by the Emergency Response Plan. According to guidelines published by FEMA together with the American Planning Association[3], this is "a plan for managing post-disaster recovery and reconstruction. Such a plan provides descriptions that include, but are not limited to, lines of authority, interagency and intergovernmental coordination measures, processes for expedited review, permitting, and inspection of repair and reconstruction of buildings and structures damaged by natural disasters."

The post disaster plan differs from the emergency response plan in that it focuses on the long term recovery efforts that must occur beyond the emergency preparedness and response functions of government just before, during and right after an emergency event. The average timeline for emergency response efforts is three days, while recovery and reconstruction can go on for weeks, months or even years.

2.1 Consider creating a Recovery and Reconstruction Ordinance in the Town Code.

A Recovery and Reconstruction Ordinance is an action a community can take to better manage disaster recovery. This is an ordinance the Town would have in place to establish a set of rules and an operational organization to deal with the aftermath and long-term recovery from a major disaster.

[3] Planning for Post-Disaster Recovery and Reconstruction. 1998. Planning Advisory Service Report Number 483/484. Schwab, et. al.

Recovery and reconstruction ordinances typically create a recovery organization and authorize a variety of pre- and post-event planning and regulatory powers and procedures related to disaster recovery and reconstruction. This organization would operate parallel to and in cooperation with emergency operations, and generally continues on beyond the typical time-frame of emergency operations, and deals with issues outside the purview of typical emergency operations such as planning and building.

Some examples of areas a Recovery and Reconstruction Ordinance might cover include the following:

a. Create temporary regulations dealing with debris hazard abatement, temporary use and repair permits, handling non-conforming uses, and permit fee waivers.

b. Emergency Contractor Certification. A system would be set up to help vet and establish the legitimacy of the flood of contractors that typically flow to regions experiencing a disaster.

c. Create a recovery management organization that lasts into the long-term recovery phase and helps direct the preparation of recovery plans as well as helping to implement those plans. This organization or team is created by putting together an interdisciplinary team of staff and officials involving all aspects of town government, including Building, Information Technology, GIS, Planning, Engineers, Human Services, Public Works, Highway Department, Accounting and any others that might be able to help the effort.

d. Creates a template Recovery Plan to be ready for details to be added depending on the type of disaster that occurs.

e. Coordinates debris removal from private property.

f. Outlines public participation in Recovery planning.

g. Creates a framework to coordinate donations and distribution of supplies to affected residents.

Responsible Parties: Planning Board and Planning Department
Possible Partnerships: Emergency Preparedness Team, Southold Town Trustees, Southold Town Departments including Building, Public Works, Highway, Community Development, Human Resources, and any other departments that might be involved in reconstruction and recovery, Village of Greenport, Riverhead, Shelter Island, Suffolk County
Timeline: 2015

3. Provide education to the public relating to natural hazards.

3.1 Create an easy to read plan for residents and visitors that clearly describes what to do in the event of natural hazard emergencies.

3.2 Use social media as a tool to inform residents and visitors of natural disasters, including how to prepare ahead of time, what to do when a predicted natural disaster is imminent or occurring, and how to deal with the aftermath.

3.3 Add links to Town website with flood zone information, maps and visual representations of flooding scenarios.

Responsible Parties: Planning Board
Possible Partnerships: Emergency Preparedness Team, Information Technology
Timeline: 2014